Transmittal Letter to the United States Designated/Elected Office (DO/EO/US)

FORM PTO-1390

Docket No.	: **BM-87PCT**
U.S. Application No	
International Application No	**PCT/EP00/09633**
International Filing Date	**October 2, 2000**
Priority Date Claimed	**October 5, 1999**
Title of Invention	**DEVICE FOR ACTUATING AN ELECTRONIC LOCKING SYSTEM AND/OR A LOCK INTEGRATED IN A DOOR, A FLAP OR THE LIKE, ESPECIALLY IN A MOTOR VEHICLE**
Applicant(s) for (DO/EO/US)	. **Reinhold Mathofer**

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. _X_ This is a **FIRST** submission of items concerning a filing under 35 U S C 371.
2. ___ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371
3. _X_ This express request to begin national examination procedures 35 U.S.C. 371 (f) at any time rather than delay examination until the expiration of the applicable time limit set forth in 35 U.S.C 371(b) and PCT Articles 22 and 39(1).
4. ___ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. _X_ A copy of the International Application as filed [35 U S.C. 371(c)(2)].
   a) _X_ is transmitted herewith (required only if not transmitted by the International Bureau)
   b) ___ has been transmitted by the international Bureau
   c) ___ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. _X_ A translation of the International Application into English [35 U.S.C.371(c)(2)]
7. ___ Amendments to the claims of the International Application under PCT Article 19 [35 U S C 371(c)(3)].
   a) ___ are transmitted herewith (required only if not transmitted by the International Bureau)
   b) ___ have been transmitted by the International Bureau
   c) ___ have not been made, however, the time limit for making such amendments has **NOT** expired
   d) ___ have not been made and will not be made
8. ___ A translation of the amendments to the claims under PCT Article 19 [35 U S C 371(c)(3)]
9. _X_ An oath or declaration of the inventor(s) [35 U S C 371(c)(4)].
10. ___ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 [35 U.S C 371(c)(5)]

Items 11. to 16. below concern other document(s) or information included:

11. _X_ An Information Disclosure Statement under 37 C F R 1 97 and 198
12. _X_ An Assignment document for recording A separate cover sheet in compliance with 37 CFR 3.28 and 3 31 is included
13. _X_ A **FIRST** preliminary amendment
    ___ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ___ A substitute specification
15. ___ A change of power of attorney and/or address letter
16. _X_ (other items or information) **Eight sheets of drawings, PTO-1449 w/ 1 reference and International Search Report**

EXPRESS MAIL No.. **EV 096 601 375 US** Deposited: **March 21, 2002**

I hereby certify that this correspondence is being deposited with the United States Postal Service Express mail under 37 CFR 1 10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, DC 20231.

Friedrich Kueffner

March 21, 2002
Date

17. X The following fees are submitted .

BASIC NATIONAL FEE [37 CFR 1.492(a)(1)-(5)]:		CALCULATIONS	PTO USE ONLY
X	Search Report has been prepared by the EPO or JPO....	$ 890.00	
___	International preliminary examination fee paid to USPTO [37 CFR 1.482]. ...	$ 710.00	
___	No International preliminary examination fee paid to USPTO [37 CFR 1 482] but International search fee paid to USPTO [37CFR 1 445(a)(2)	$ 740.00	
___	Neither International preliminary examination fee [37 CFR 1 482] nor International search fee [37 CFR 1.445(a)(2)] paid to USPTO	$ 1040.00	
___	International preliminary examination fee paid to USPTO [37 CFR 1 482] and all claims satisfied provisions of PCT Article 33 (2) to (4)	$ 100.00	
	ENTER APPROPRIATE BASIC FEE AMOUNT:	$ 890.00	

Surcharge of $ 130 00 for furnishing the oath or declaration later than ___20 ___30 months from the earliest claimed priority date [37 CFR 1 492(e)]						$
Claims	filed		Extra		Rate	
Total Claims	10	-20=		x	$ 18 =	$
Indep. Claims	1	- 3=		x	$ 84 =	$
Multiple Dependent Claims (if applicable)				+	$ 280 =	$
			TOTAL OF ABOVE CALCULATIONS:			$ 890.00
Reduction by ½ for filing by small entity, if applicable. Verified Small Entity Statement must be filed also [Note 37 CFR 1 9,1.27, 1.28]			(divided by 2)			
			SUBTOTAL:			$ 890.00
Processing fee of $ 130 00 for furnishing the English Translation later than ___20 ___30 months from the earliest claimed priority date [37 CFR 1 492(f)]						$
			TOTAL NATIONAL FEE:			$ 890.00
Fee for recording the enclosed assignment [37 CFR 1 21(h)] The assignment must be accompanied by an appropriate cover sheet [37 CFR 3 28,3.31]. $ 40.00 per property						$ 40.00
			TOTAL FEES ENCLOSED:			$ 930.00
			AMOUNT TO BE REFUNDED:			Refunded $
			AMOUNT TO BE CHARGED:			Charged $

a) X A check in the amount of **$ 930.00** to cover the above fees is enclosed.

b) _ Please charge my Deposit Account No. 11-1835 in the amount of $ to cover the above fees
A duplicate copy of this sheet is enclosed

c) X The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No **11-1835** A duplicate copy of this sheet is enclosed

NOTE: Where an appropriate time limit under 36 CFR 1 494 or 1 495 has not been met, a petition to revive [37 CFR 1 137(a) or (b)] must be filed and granted to restore the application to pending status

SEND ALL CORRESPONDENCE TO: Friedrich Kueffner
317 Madison Avenue
Suite 910
New York, NY 10017

Friedrich Kueffner
Name

signature

29,482
Reg. No.

March 21, 2002
Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BM-87PCT

Applicant(s)	:	Reinhold Mathofer
Serial No.	:	NOT YET KNOWN (PCT/EP00/09633)
Int. Filed	:	October 2, 2000
For	:	DEVICE FOR ACTUATING AN ELECTRONIC LOCKING SYSTEM AND/OR A LOCK INTEGRATED IN A DOOR, A FLAP OR THE LIKE, ESPECIALLY IN A MOTOR VEHICLE

Assistant Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

S I R:

In advance of the first office action, please amend the claims as follows:

IN THE CLAIMS

Replace current claims 1 - 10 by the enclosed amended claims 1 - 10. A marked-up version of amended claims 1 - 10 is also enclosed.

REMARKS

Claims 1 - 10 are in the application.

As a result of the foregoing amendment, the claims have been amended to remove improper multiple dependencies.

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 11-1835.

Respectfully submitted,

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March 21, 2002
FK:ml
ENCLS:
Amended Claims;
Marked-Up Version.

EXPRESS MAIL No.: **EV 096 601 375 US** Deposited: **March 21, 2002**

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Friedrich Kueffner

CLEAN VERSION OF AMENDED CLAIMS

1. Device for actuating an electronic locking system and/or a lock mounted in a door (40), a flap or the like, in particular, for a vehicle,

comprising a handle (10) arranged on the exterior side (41) of the door, which handle has a projection (11), penetrating an opening (44) in the door (40) and projecting from the inner side (42) of the door and, serving as a bearing projection (11), having bearings (51), and comprising a support part (20) arranged on the inner side (42) of the door which supports a bearing block (21) having counter bearings (52) for the bearings (51) of the handle,

and the handle (10) has a handle interior (19) in which electric and/or electronic means are arranged which are connected by lines (18, 38) and an electric plug-in connection (30) with an electronic control device, wherein one electric coupling part (31) of the electric plug-in connection (30) is arranged on the bearing projection (11) of the handle (10),

wherein the handle (10) can be mounted with its bearing projection (11) from the exterior side (41) of the door,

wherein

the electrical coupling part (31) correlated with the handle (10) is arranged by means of a pivot bearing (71) on the bearing projection (11) of the handle (10),

and that the counter coupling part (32) correlated with the support part (20) of the electrical plug connection (30) is pivotably and/or slidably arranged on the support part (20).

2. Device according to claim 1, wherein the counter coupling part (32) correlated with the support part (20) is arranged by means of a pivot bearing (71) on the support part (20).

3. Device according to claim 1, wherein the counter coupling part (32) correlated with the support part (20) is arranged by means of a double pivot bearing (72) on the support part (20).

4. Device according to claim 1, wherein the counter coupling part (32) correlated with the support part (20) is arranged by means of a guide slot (27) on the support part (20).

5. Device according to claim 1, wherein on the bearing projection (11) securing means (13) are provided which detachably engage engagement points (37) of the electric coupling part (31).

6. Device according to claim 3, wherein the double pivot bearing (72) is comprised of two bearings (73, 74).

7. Device according to claim 6, wherein the two bearings (73, 74) are coupled with one another by means of a pivot lever (22).

8. Device according to claim 1, wherein in one half of the pivot lever (22) a bearing eye (23) is arranged in which a bearing pin (39) of the electrical counter coupling (32) is seated and, in this way, a first pivot bearing (74) is formed,

and that on the oppositely positioned half of the pivot lever (22) on the side facing the support part (20) a bearing pin (24) is provided whose one part is formed as a sliding block (26),

and that on the securing stay (20') of the support part (20) a bearing eye (28) is arranged into which a guide slot (27) opens from one side,

and that in a first position (75) of the bearing pin (24) the sliding block (26) is located in the guide slot (27) and the remaining part of the bearing pin (24 is located in the bearing eye (28),

while in a second position (76) the bearing pin (24) with its sliding block (26) is pivotable in the bearing eye (28).

9. Device according to claim 1, wherein the pivot bearing (71) is comprised of a bearing hole (17) arranged in the bearing projection (11) and a rotary bearing axle (36) arranged on the lower end of the electrical coupling part (31).

10. Device according to claim 1, wherein the securing means (13) engage in a first securing position (77) of the electrical coupling part (31) the engagement points (37) of the electrical coupling part (31),

while the securing means (13) in a second release position (778) are released from the engagement points (37) of the electrical coupling part (31) with release of the electrical coupling part (31).

MARKED-UP VERSION OF AMENDED CLAIMS

1. Device for actuating an electronic locking system and/or a lock mounted in a door (40), a flap or the like, in particular, for a vehicle,

comprising a handle (10) arranged on the exterior side (41) of the door, which handle has a projection (11), penetrating an opening (44) in the door (40) and projecting from the inner side (42) of the door and, serving as a bearing projection (11), having bearings (51), and comprising a support part (20) arranged on the inner side (42) of the door which supports a bearing block (21) having counter bearings (52) for the bearings (51) of the handle,

and the handle (10) has a handle interior (19) in which electric and/or electronic means are arranged which are connected by lines (18, 38) and an electric plug-in connection (30) with an electronic control device, wherein one electric coupling part (31) of the electric plug-in connection (30) is arranged on the bearing projection (11) of the handle (10),

wherein the handle (10) can be mounted with its bearing projection (11) from the exterior side (41) of the door,

[characterized in that] wherein

the electrical coupling part (31) correlated with the handle (10) is arranged by means of a pivot bearing (71) on the bearing projection (11) of the handle (10),

and that the counter coupling part (32) correlated with the support part (20) of the electrical plug connection (30) is pivotably and/or slidably arranged on the support part (20).

2. Device according to claim 1, [characterized in that] wherein the counter coupling part (32) correlated with the support part (20) is arranged by means of a pivot bearing (71) on the support part (20).

3. Device according to [claim 1 or 2, characterized in that] claim 1, wherein the counter coupling part (32) correlated with the support part (20) is arranged by means of a double pivot bearing (72) on the support part (20).

4. Device according to claim 1, [characterized in that] wherein the counter coupling part (32) correlated with the support part (20) is arranged by means of a guide slot (27) on the support part (20).

5. Device according to [one of the claims 1 to 4, characterized in that] claim 1, wherein on the bearing projection (11) securing means (13) are provided which detachably engage engagement points (37) of the electric coupling part (31).

6. Device according to claim 3, [characterized in that] wherein the double pivot bearing (72) is comprised of two bearings (73, 74).

7. Device according to claim 6, [characterized in that] wherein the two bearings (73, 74) are coupled with one another by means of a pivot lever (22).

8. Device according to [one of the claims 1, 3 and 6 to 7, characterized in that] claim 1, wherein in one half of the pivot lever (22) a bearing eye (23) is arranged in which a bearing pin (39) of the electrical counter coupling (32) is seated and, in this way, a first pivot bearing (74) is formed,

and that on the oppositely positioned half of the pivot lever (22) on the side facing the support part (20) a bearing pin (24) is provided whose one part is formed as a sliding block (26),

and that on the securing stay (20') of the support part (20) a bearing eye (28) is arranged into which a guide slot (27) opens

from one side,

and that in a first position (75) of the bearing pin (24) the sliding block (26) is located in the guide slot (27) and the remaining part of the bearing pin (24 is located in the bearing eye (28),

while in a second position (76) the bearing pin (24) with its sliding block (26) is pivotable in the bearing eye (28).

9. Device according to claim 1, [characterized in that] wherein the pivot bearing (71) is comprised of a bearing hole (17) arranged in the bearing projection (11) and a rotary bearing axle (36) arranged on the lower end of the electrical coupling part (31).

10. Device according to [one of the claims 1 and 5, characterized in that] claim 1, wherein the securing means (13) engage in a first securing position (77) of the electrical coupling part (31) the engagement points (37) of the electrical coupling part (31),

while the securing means (13) in a second release position (778) are released from the engagement points (37) of the electrical coupling part (31) with release of the electrical coupling part (31).

8/PRTS

Translation of WO 01/25575 (PCT/EP00/09633)

Device for Actuating an Electronic Locking System and/or a Lock Integrated in a Door, a Flap or the Like, Especially in a Motor Vehicle

The invention relates to a device of the kind mentioned in the preamble of claim 1. The handle arranged on the exterior side of the door has generally two projections which penetrate openings in the door and project from the back side of the door panel. One projection can comprise a bearing for a pivot support of the handle on a bearing block fixedly connected on the back side of the door, wherein the bearing block has complementary counter bearings. This first projection therefore serves as a bearing projection of the handle.

The second projection of the handle serves primarily as a further securing means of the handle on the door. The second projection can also be configured such that, upon actuation of the handle, it cooperates with lock members on the inner side of the door. Accordingly, by means of this working projection a lock can be actuated after actuation of the handle. Mounting of the handle is realized from the exterior side of the door where the bearing projection as well as the working projection are inserted through the respective openings in the door until they are in the prescribed position on the inner side of the door in the area of the bearing block, on the one hand, and in the area of the lock members, on the other hand. In order to achieve this, a certain movement sequence of the handle is required during the mounting movement through the door opening.

In a device of the aforementioned kind known from DE 196 33 894 A1, the handle comprises electronic components in the handle interior which are connected by an electrical line with an electrical coupling provided on the end of the bearing projection. In the mounted state of the door handle, the electrical coupling is connected by means of an electrical counter coupling part and an electrical control line connected thereto with an electronic device of the vehicle. In this known door handle, the bearings of the handle on the bearing projection are arranged in immediate vicinity of the electrical coupling part. When mounting the handle according to DE 196 33 894 A1, the electrical coupling part within the bearing projection is inserted into an electrical counter coupling part which is provided on a support already mounted on the door.

The disadvantage of the device of 196 33 894 A1 is that it is relatively complex with regard to manufacturing technology and that special counter coupling parts must be employed.

It is an object of the present invention to develop a reliable device of the kind mentioned in the preamble of claim 1 which avoids the aforementioned disadvantages. This is achieved according to the invention by the measures defined in the characterizing portion of claim 1 which have the following special meaning.

The special feature of the present invention resides in that the electrical coupling part, which is arranged on the bearing projection of the door handle, is arranged pivotably on it and that the electrical counter coupling part, which must be inserted during

mounting of the door handle on the door into the electrical coupling part, is also arranged pivotably at least on a frame part of a support provided on the door. Advantageously, the electrical coupling part can be detachably secured in an initial position on the bearing projection at the beginning of mounting of the door handle on the door so that the electrical coupling part cannot pivot away upon insertion into the electrical counter coupling part.

The electrical counter coupling part can have a shaped means which prevents pivoting of the electrical counter coupling part in the initial position of mounting. This could be, for example, a nose which is positioned within the opening area of the electrical counter coupling part.

Advantageously, the present invention can be produced relatively simply with regard to manufacturing technology. In comparison to normal door handles or coupling part arranged thereat only one bearing must be provided on the bearing projection of the door handle. The coupling part can be a commercially available electrical coupling part which must only be expanded by a bearing. Also, the employed counter coupling part can be a commercially available counter coupling part which is only modified.

In the mounted state the present electrical plug-in coupling has the advantage that the electrical coupling parts cannot move relative to one another upon a pivot movement of the handle. Accordingly, no wear of the electrical plug contact can result.

Moreover, the present invention enables a simple and simultaneous mounting of the electrical plug-in coupling and the handle on the door.

In an advantageous embodiment of the invention, the electrical counter coupling part is arranged on the support part by means of a pivot lever which is rotatably supported twofold. One of these bearings this is preferably lockable in one position so that in this position only one of the bearings is pivotable. This ensures a simple insertion of the electrical coupling part into the electrical counter coupling part upon mounting of the door handle on the door.

Further advantages and measures of the invention result from the dependent claims, the following description, and the drawings. In the drawings the invention is illustrated with one embodiment. It is shown in:

Fig. 1 schematically a longitudinal section of the device fastened on the door of a vehicle, wherein a first mounting position of the handle correlated therewith is illustrated;

Fig. 2 schematically an enlarged detail of Fig. 1 according to the dash-dotted rectangle II of Fig. 1;

Fig. 3 schematically a longitudinal section corresponding to Fig. 1, with a second mounting position of the

device according to the invention illustrated therein;

Fig. 4 schematically a section corresponding to Fig. 1 with a third mounting position of the device according to the invention illustrated therein;

Fig. 5 schematically a longitudinal section corresponding to Fig. 1 with a fourth mounting position of the device according to the invention illustrated therein;

Fig. 6 schematically a longitudinal section corresponding to Fig. 1 with a fifth mounting position of the device according to the invention illustrated therein;

Fig. 7 schematically a longitudinal section corresponding to Fig. 1 with a final mounting position of the device according to the invention illustrated therein;

Fig. 8 schematically a section according to the section line VIII-VIII of Fig. 6;

Fig. 9 schematically a section according to the section line IX-IX of Fig. 2.

In Figs. 1, 2 and 9 the device according to the invention is illustrated in a first mounting position. On the backside 42 of a

door 40 a support is mounted which is secured in its position by means of one or more screws 29 on the door panel. In the door 40 several openings 44, 45, 46 are provided which are penetrated, during and after mounting of the door handle 10, by its forward and rearward projections 11, 12.

The door handle 10 has a handle interior 19 in which electronic components are positioned which cooperate with an electronic control device of the locking system or the like. At the leading end of the door handle a projection 11 is formed on the door handle 10 which is embodied as a bearing projection. On this bearing projection 11 a bearing 51 is provided which in the mounted state of the door handle 10 cooperates with a bearing 52 of the support part 20. The support part 20 has for this purpose a bearing block 21 on which the counter bearing 52 is arranged. In the illustrated embodiment, the door handle is pivotably secured on the bearings 51, 52 in the mounted state. An electrical coupling part 31 of an electrical plug-in connection 30 is also arranged on the bearing projection 11. The electrical coupling part 31 is pivotably supported on the bearing projection 11 by means of a pivot bearing 71, which is comprised of a bearing hole 17 provided in the bearing projection 11 and a rotary bearing axle 36 provided on the electrical coupling part 31. The rotary bearing axle 36 is connected by a U-shaped bearing projection 35 with the electrical coupling part 31. The electrical coupling part has moreover an engagement point 37 which can be engaged by securing means 31 of the bearing projection 11. In Figs. 1, 2 and 9 a first mounting position of the door handle 10 is illustrated in which the electrical coupling part 31 is in this securing position 77.

The electrical coupling part 31 is electrically connected by a connecting line 18 with electronic components in the handle interior 19.

On the support part 22 securing stays 20' are arranged on which the electrical counter coupling part 32 of the electrical plug connection 30 is secured pivotably and slidably.

The detailed configuration and the arrangement of the electrical counter coupling part 32 on the securing stay 20' of the support part 20 can be seen in Figs. 2 and 8. In the area of the door opening 44, through which the bearing projection 11 of the door handle 11 is guided through the door 40, a securing stay 20' as an extension of the support part 20 is formed on the support part 20 on opposed sides of the door opening 44 parallel to the direction of extension of the handle. These securing stays 20' are provided with a bearing eye 28 and a guide slot 27 formed thereon. The bearing eye 28 serves for pivoting a bearing pin 24 on a pivot lever 22. A rearward part of this bearing pin 24 on the pivot lever 22 is formed as a sliding block 26. The bearing pin 24 with the sliding block 26 can have two positions 75 and 76. In the first position of the bearing pin 24, the sliding block 26 is positioned in the guide slot 27 on the securing stay 20'. A pivot movement of the bearing 73 formed of the bearing eye 28 and the bearing pin 24 is not possible. In a second position 76 of the bearing pin 24 in the bearing eye 28, the sliding block 26 is moved out of the guide slot 27 and the bearing pin 24 is positioned entirely within the bearing eye 28 and is rotatable therein. The bearing 73 is now pivotable. On the pivot lever 22 a bearing eye 23 is arranged on its second pivot lever side in which the bearing

pin 39 of the electrical counter coupling part 32 is inserted. The bearing pin 39 and the bearing eye 23 from the bearing 74 on which the electrical counter coupling part 32 is pivotably arranged. The bearings 73 and 74 form together a double pivot bearing 72 defined by the pivot lever 22. On the electric counter coupling part 32 a supply and control line 38 is arranged via which the electrical counter coupling member 32 is connected to an electronic control.

Mounting of the device according to the invention is carried out in several movement steps. In Fig. 1 a first movement step of the assembly is illustrated. The door handle 10 is first inserted, corresponding to the direction of the insertion arrow 53, with its bearing projection 11 into the door opening 44 and, in this way, the electrical coupling part 31 is inserted, corresponding to the direction of arrow 60, into the electric counter coupling part 32. The bearing 74 is blocked during this process by the sliding block 26 which is positioned in the guide slot 27.

In Fig. 3 the position reached after this first mounting step is illustrated. The electrical coupling part 31 and the electrical counter coupling 32 form together the electrical plug-in connection 30 in which a contacting is achieved via the pin contacts 33 and the bushing contact 34 which are inserted into one another. The two coupling parts 31 and 32 are secured on one another by coupling means 31' and counter coupling means 32'. This connection is detachable for repair purposes or the like.

Fig. 3 illustrates a further mounting direction of the door handle 10. Corresponding to the illustrated rotational movement in the direction of rotation arrow 54, the projection/working projection

12 of the door handle 10 is pivoted into the door opening 45 of the door 40 from the exterior side 41. In this connection, the bearing 71 is moved in the rotational direction 54', and the securing means 13 is released in the direction of arrow 54'' from the engagement point 37 of the electrical coupling part 31. The electrical coupling part 31 and thus the electrical plug-in connection 30 are now in the release position 78.

At the end of this mounting movement, the leading end of the working projection 10 of the door handle 10 is positioned shortly behind the door opening 45, as illustrated in Fig. 4. Starting from this position, the door handle 10 is further pivoted in the direction of rotation arrow 55. In this connection, the rearward surface 14 of the bearing projection 11 rests against the stop 50 of the support part 20 and becomes the elbow of an elbow lever. The bearing projection 11 is pivoted in this connection in the direction of arrow 55'' on the stop 50. As a result of this pivot movement, a lateral movement 55' is exerted onto the bearing pin 24 and its sliding block 26 which thus moves out of the guide slot 27.

In Fig. 5 the position of the door handle 10 on the door 40 after completion of mounting movement 55 is illustrated. It is shown that the bearing pin 24 is now completely located within the bearing eye 28 and is thus also rotatable. In Fig. 5 moreover the further mounting movement of the door handle 10 is illustrated. Corresponding to arrow 56, the door handle 10 is moved farther into the door. This results in a rotation on the bearing 71 corresponding to the rotational direction 56''. The rotation of the bearing 73 is indicated by arrow 56'. Corresponding to the eccentricity of the pivot lever 22, its second bearing with the

bearing eye 23 moves upwardly. The bearing 74 compensates the movement of the bearing 73.

In Fig. 6 the end position of the mounting movement 56 is illustrated. The handle is now positioned against the door 40.

The door handle 10 is now moved corresponding to the mounting movement 54 along the depression 43 of the door 40 in the direction of arrow 57. This results in a rotation 57' on the bearing 73. Corresponding to the eccentricity of the pivot lever 22, its second bearing with the bearing eye 23 moves again downwardly. The bearings 71, 74 again provide a flowing pivot movement. At the end of this last mounting movement, the bearing eye 15 has moved about the counter bearing 25 and embraces it. The working projection 12 of the door handle 10 moves behind the locking member 16 with which, by means of the door handle 10, a lock can be actuated. For further securing of the door handle 10, the cylinder column 61 and the lock cylinder 62 must be inserted into the door opening 46 so that a return movement of the door handle 10 counter to the mounting movement 57 is no longer possible.

It should be noted in this context that instead of the cylinder column 61 and the lock cylinder 62 also a blind cap can be inserted as is the case, for example, in fully automated locking systems which require no mechanical adjusting movement. By means of the illustrated control member 63 the locking system/lock can be secured or released by means of actuation of the lock cylinder 62.

It should be also noted that the present invention is not limited to the illustrated embodiment. Other embodiments are also

conceivable. For example, instead of the double pivot bearing 72 also a guide slot can be provided on the securing stay 20' on which the electrical counter coupling part 32 is directly supported (not illustrated in the drawing).

Also, on the electrical counter coupling part 32 in the direction of the working projection 12 a further nose can be formed which secures the electrical counter coupling part 32 in position during insertion of the electrical coupling part (not illustrated in the drawing).

Instead of the sliding block 26 and the guide slot 27 other means for securing a bearing can also be provided.

List of Reference Numerals

10	handle (rest position)
11	projection/bearing projection
12	projection/working projection
13	securing means
14	rearward surface of 11
15	bearing eye of 11
16	locking member (rest position)
17	bearing hole in 11
18	connecting line for 31
19	handle interior of 10
20	support part
20'	securing stay of 20
21	stationary bearing block of 20
22	pivot lever
23	bearing eye in 22
24	bearing pin on 22
25	counter bearing to 15
26	sliding block on 22
27	guide slot
28	bearing eye in 20'
29	screw in 20
30	electrical plug-in connection
31	electrical coupling part of 30
31'	coupling means
32	electrical counter coupling part of 30 (rest position)
32'	counter coupling means
33	pin contact in 32
34	bushing contact in 31

35	U-shaped bearing projection
36	rotary bearing axle of 35
37	engagement point for 13
38	supply and control line for 32
39	bearing pin on 32
40	door, door panel
41	exterior side of 40
42	inner side of 40
43	depression in 40
44	first door opening for 11
45	second door opening for 12
46	third door opening for 61
50	stop
51	bearing on 11
52	counter bearing on 21, 20
53	insertion arrow (mounting movement)
54	rotation arrow (mounting movement)
54'	rotational direction bearing 71
54''	release movement of 13
55	rotation arrow (mounting movement)
55'	retraction movement of 26
55''	rotational movement on stop 50
56	arrow (mounting movement)
56'	rotational direction, bearing 73
56''	rotational direction, bearing 71
57	last pushing movement phase (mounting movement)
57'	rotational movement on the bearing 73
60	arrow for insertion direction of 31 into 32

61 cylinder column
62 lock cylinder of 61
63 control member of 62

71 pivot bearing
72 double pivot bearing
73 bearing
74 bearing
75 first position of bearing pin 24
76 second position of bearing pin 24
77 securing position of the electrical coupling part (31)
78 release position of the electrical coupling part (31)

Claims

1. Device for actuating an electronic locking system and/or a lock mounted in a door (40), a flap or the like, in particular, for a vehicle,

comprising a handle (10) arranged on the exterior side (41) of the door, which handle has a projection (11), penetrating an opening (44) in the door (40) and projecting from the inner side (42) of the door and, serving as a bearing projection (11), having bearings (51), and comprising a support part (20) arranged on the inner side (42) of the door which supports a bearing block (21) having counter bearings (52) for the bearings (51) of the handle,

and the handle (10) has a handle interior (19) in which electric and/or electronic means are arranged which are connected by lines (18, 38) and an electric plug-in connection (30) with an electronic control device, wherein one electric coupling part (31) of the electric plug-in connection (30) is arranged on the bearing projection (11) of the handle (10),

wherein the handle (10) can be mounted with its bearing projection (11) from the exterior side (41) of the door,

characterized in that

the electrical coupling part (31) correlated with the handle (10) is arranged by means of a pivot bearing (71) on the bearing projection (11) of the handle (10),

and that the counter coupling part (32) correlated with the support part (20) of the electrical plug connection (30) is pivotably and/or slidably arranged on the support part (20).

2. Device according to claim 1, characterized in that the counter coupling part (32) correlated with the support part (20) is arranged by means of a pivot bearing (71) on the support part (20).

3. Device according to claim 1 or 2, characterized in that the counter coupling part (32) correlated with the support part (20) is arranged by means of a double pivot bearing (72) on the support part (20).

4. Device according to claim 1, characterized in that the counter coupling part (32) correlated with the support part (20) is arranged by means of a guide slot (27) on the support part (20).

5. Device according to one of the claims 1 to 4, characterized in that on the bearing projection (11) securing means (13) are provided which detachably engage engagement points (37) of the electric coupling part (31).

6. Device according to claim 3, characterized in that the double pivot bearing (72) is comprised of two bearings (73, 74).

7. Device according to claim 6, characterized in that the two bearings (73, 74) are coupled with one another by means of a pivot lever (22).

8. Device according to one of the claims 1, 3 and 6 to 7, characterized in that in one half of the pivot lever (22) a bearing eye (23) is arranged in which a bearing pin (39) of the electrical counter coupling (32) is seated and, in this way, a first pivot bearing (74) is formed,

and that on the oppositely positioned half of the pivot lever (22) on the side facing the support part (20) a bearing pin (24) is provided whose one part is formed as a sliding block (26),

and that on the securing stay (20') of the support part (20) a bearing eye (28) is arranged into which a guide slot (27) opens from one side,

and that in a first position (75) of the bearing pin (24) the sliding block (26) is located in the guide slot (27) and the remaining part of the bearing pin (24 is located in the bearing eye (28),

while in a second position (76) the bearing pin (24) with its sliding block (26) is pivotable in the bearing eye (28).

9. Device according to claim 1, characterized in that the pivot bearing (71) is comprised of a bearing hole (17) arranged in the bearing projection (11) and a rotary bearing axle (36) arranged on the lower end of the electrical coupling part (31).

10. Device according to one of the claims 1 and 5, characterized in that the securing means (13) engage in a first securing position (77) of the electrical coupling part (31) the engagement points (37) of the electrical coupling part (31),

while the securing means (13) in a second release position (778) are released from the engagement points (37) of the electrical coupling part (31) with release of the electrical coupling part (31).

(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

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(81) Bestimmungsstaaten *(national)*: AU, BR, CN, IN, JP, KR, US.

(84) Bestimmungsstaaten *(regional)*: europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Veröffentlicht:

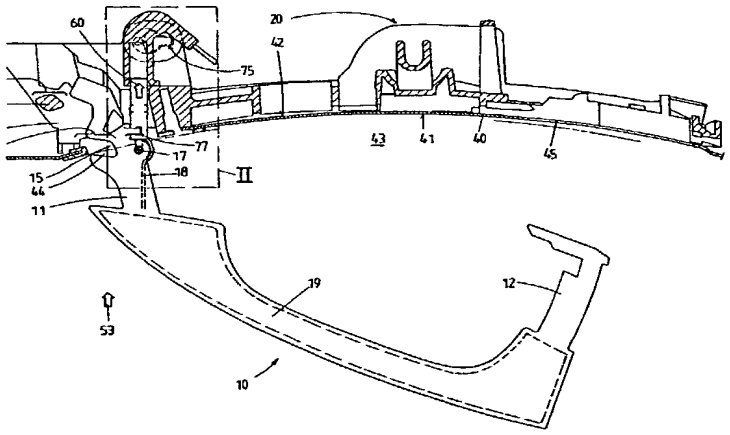
— *Mit internationalem Recherchenbericht.*

— *Vor Ablauf der fur Änderungen der Ansprüche geltenden Frist; Veröffentlichung wird wiederholt, falls Änderungen eintreffen.*

[Fortsetzung auf der nachsten Seite]

(54) **Title:** DEVICE FOR ACTUATING AN ELECTRONIC LOCKING SYSTEM AND/OR A LOCK INTEGRATED IN A DOOR, A FLAP OR THE LIKE, ESPECIALLY IN A MOTOR VEHICLE

(54) **Bezeichnung:** VORRICHTUNG ZUR BETÄTIGUNG EINES ELEKTRONISCHEN SCHLIESSSYSTEMS UND/ODER EINES IN EINER TÜR, EINER KLAPPE OD. DGL. EINGEBAUTEN SCHLOSSES, INSBESONDERE BEI EINEM FAHRZEUG



(57) **Abstract:** The invention relates to a device for actuating an electronic locking system and/or a lock integrated in a door (40), a flap or the like, especially in a motor vehicle. Said locking system or lock is actuated by a handle (10) mounted on the door outer side (41). Said handle (10) is fixed to the door (40) by means of a support shoulder (11). The fixation can be of a swiveled type. Known door handles are provided with plug-in couplings mounted on the support shoulder (11) of the door handle (10) to contact the electronics mounted in the handle with control electronics. The aim of the invention is to simplify the manufacture of such a device. To this end, an electric coupling element (31) is swivellably mounted on the support shoulder (11). The support (20) on the door carries a swivelably and/or slideably mounted, electric counter coupling element (32). The inventive device allows that the electric coupling elements (31, 32) of the electric plug-in coupling (30) can be coupled into the door opening simultaneously with the insertion of the support shoulder (11) of the door handle (10), namely already in the first assembly stage.

[Fortsetzung auf der nächsten Seite]

WO 01/25575 A1

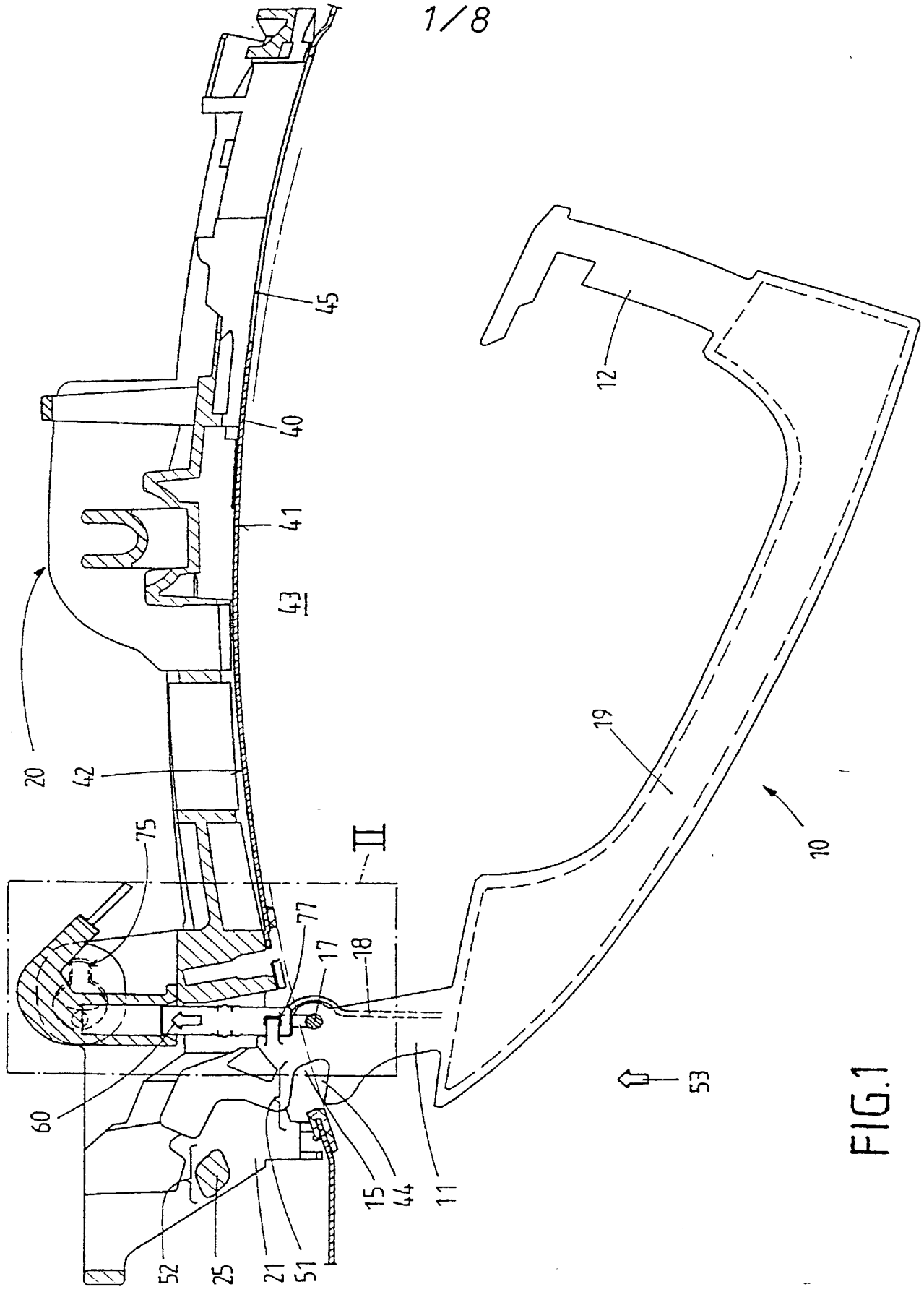


FIG.1

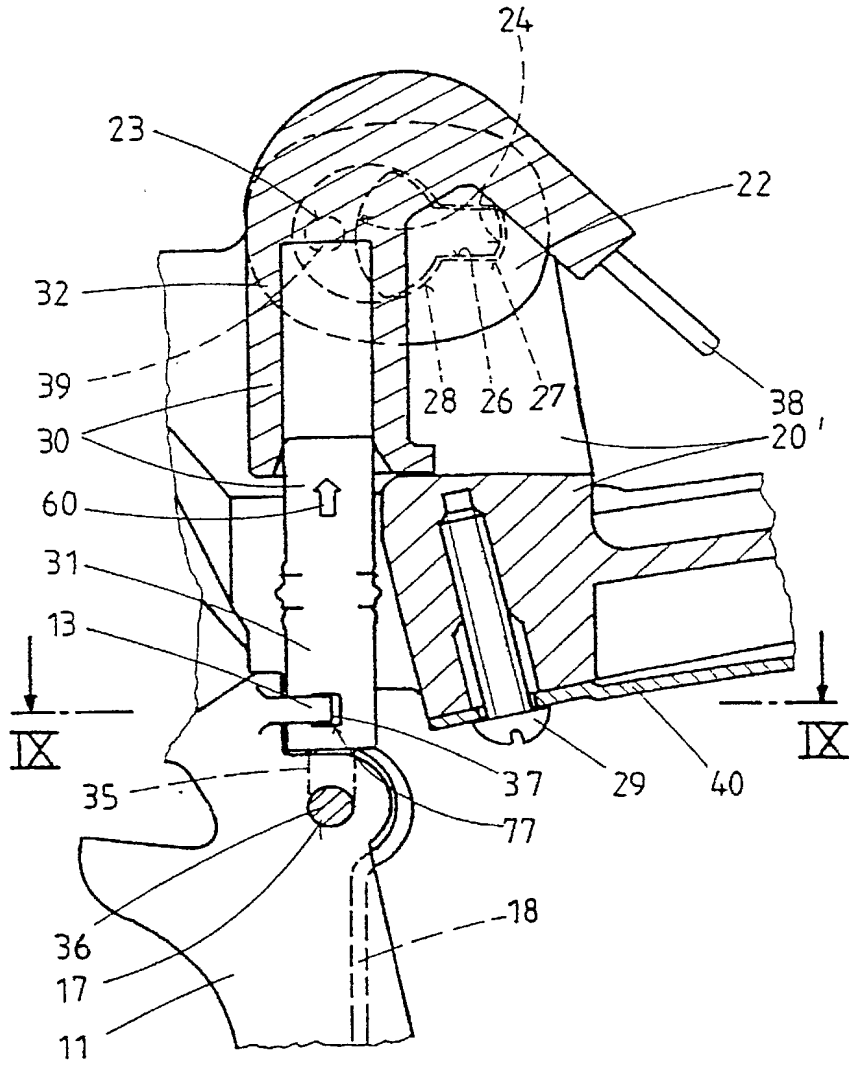

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FIG.2

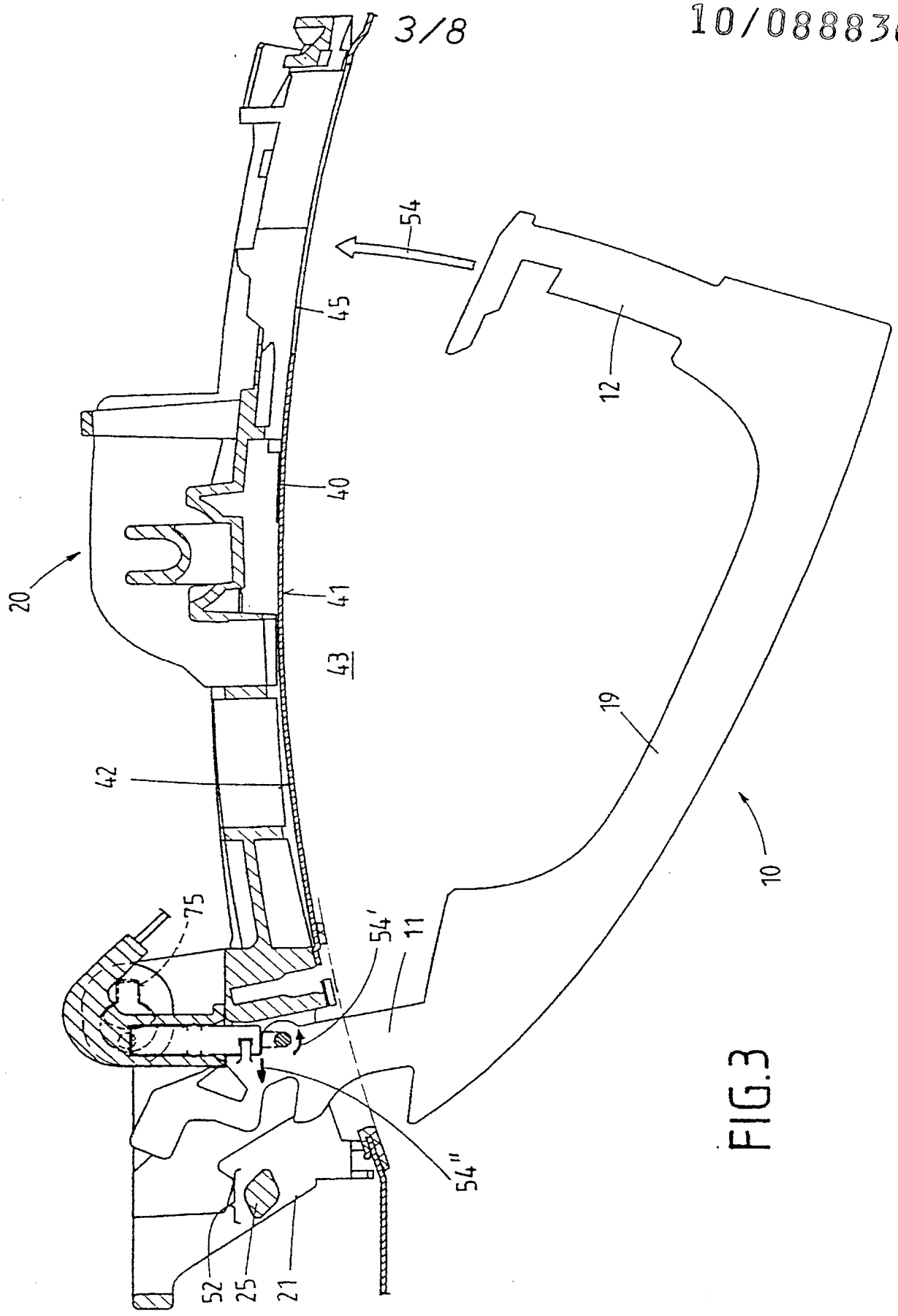

FIG.3

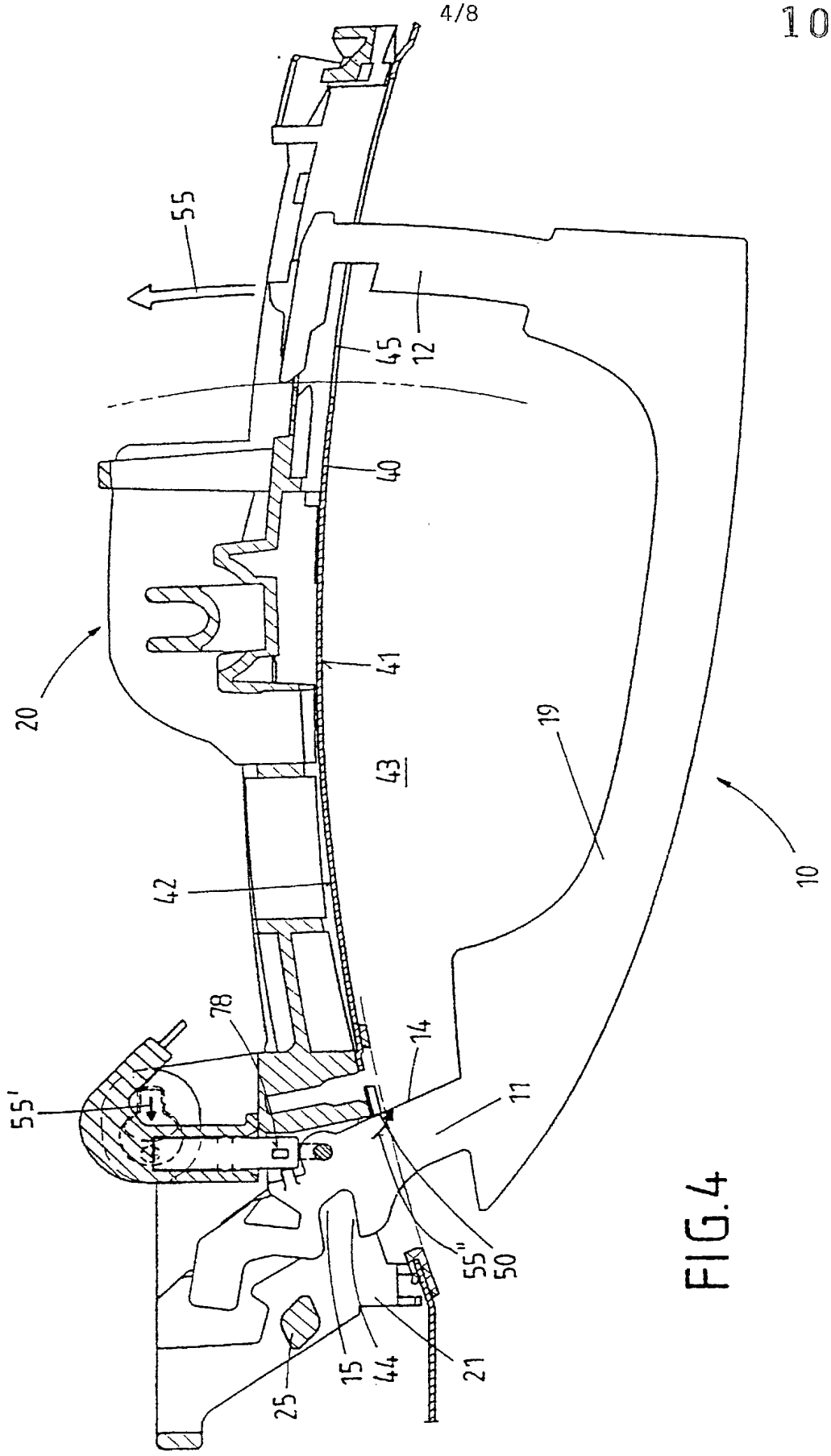

FIG.4

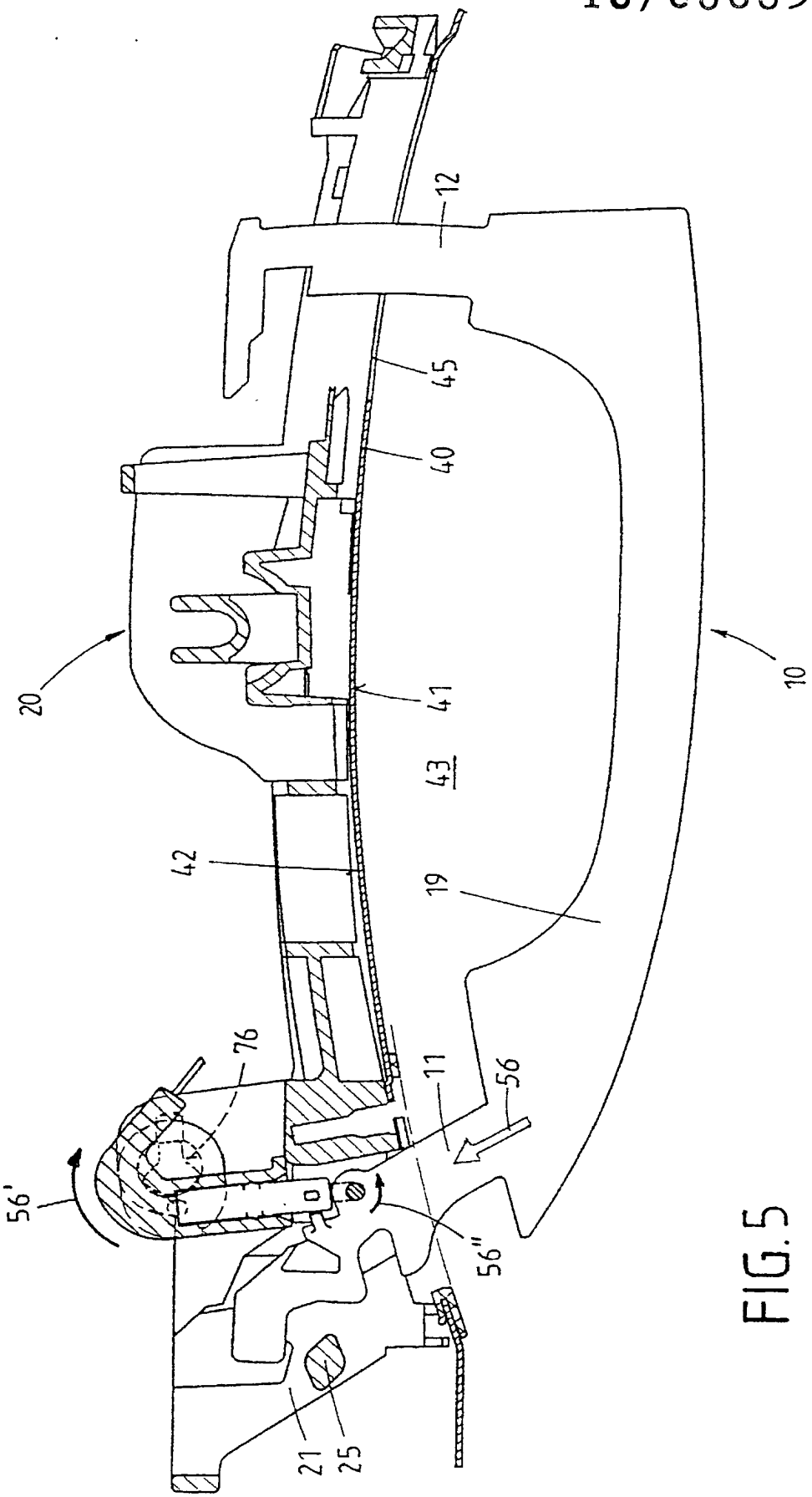

FIG.5

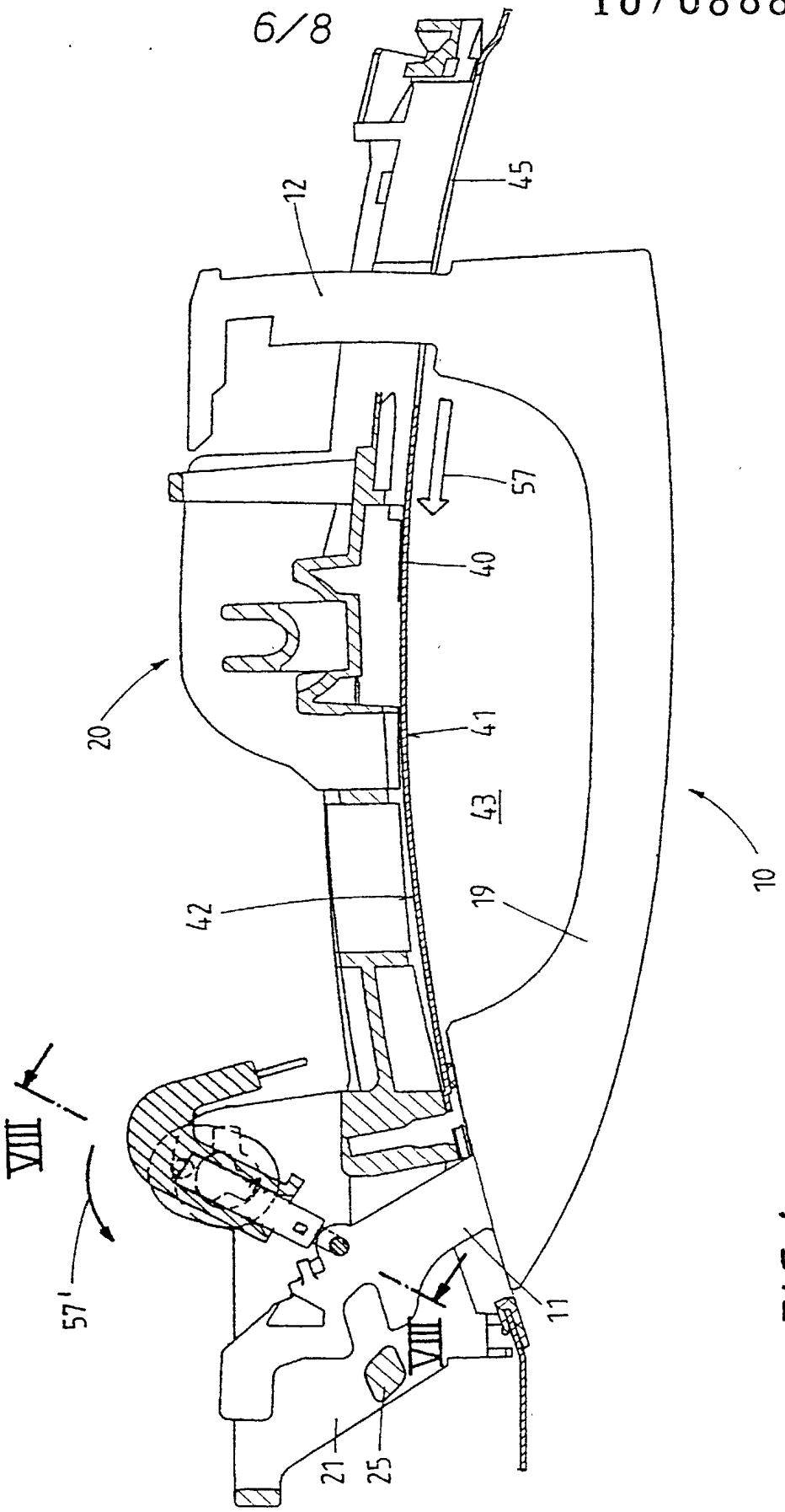

FIG.6

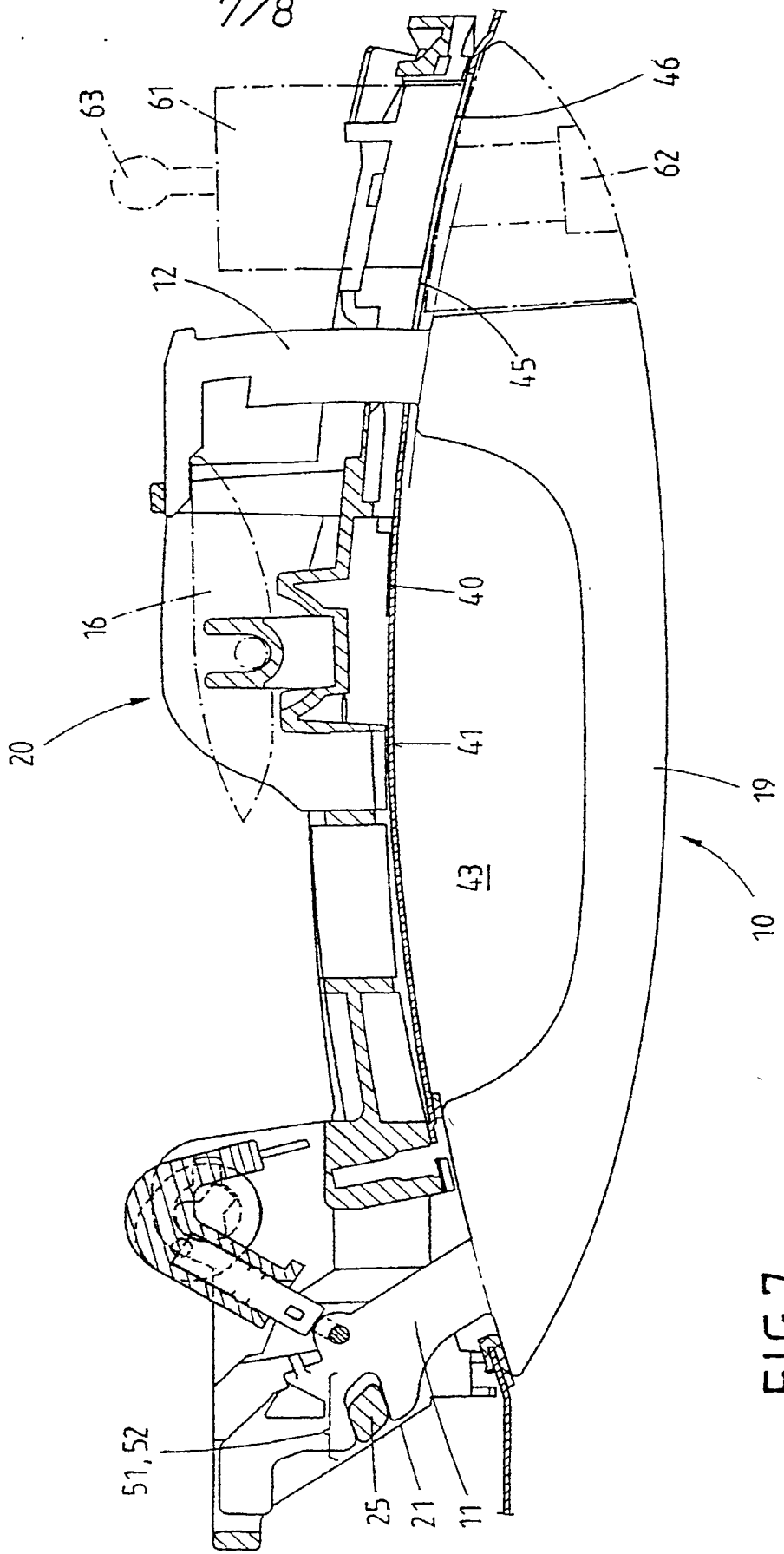

FIG.7

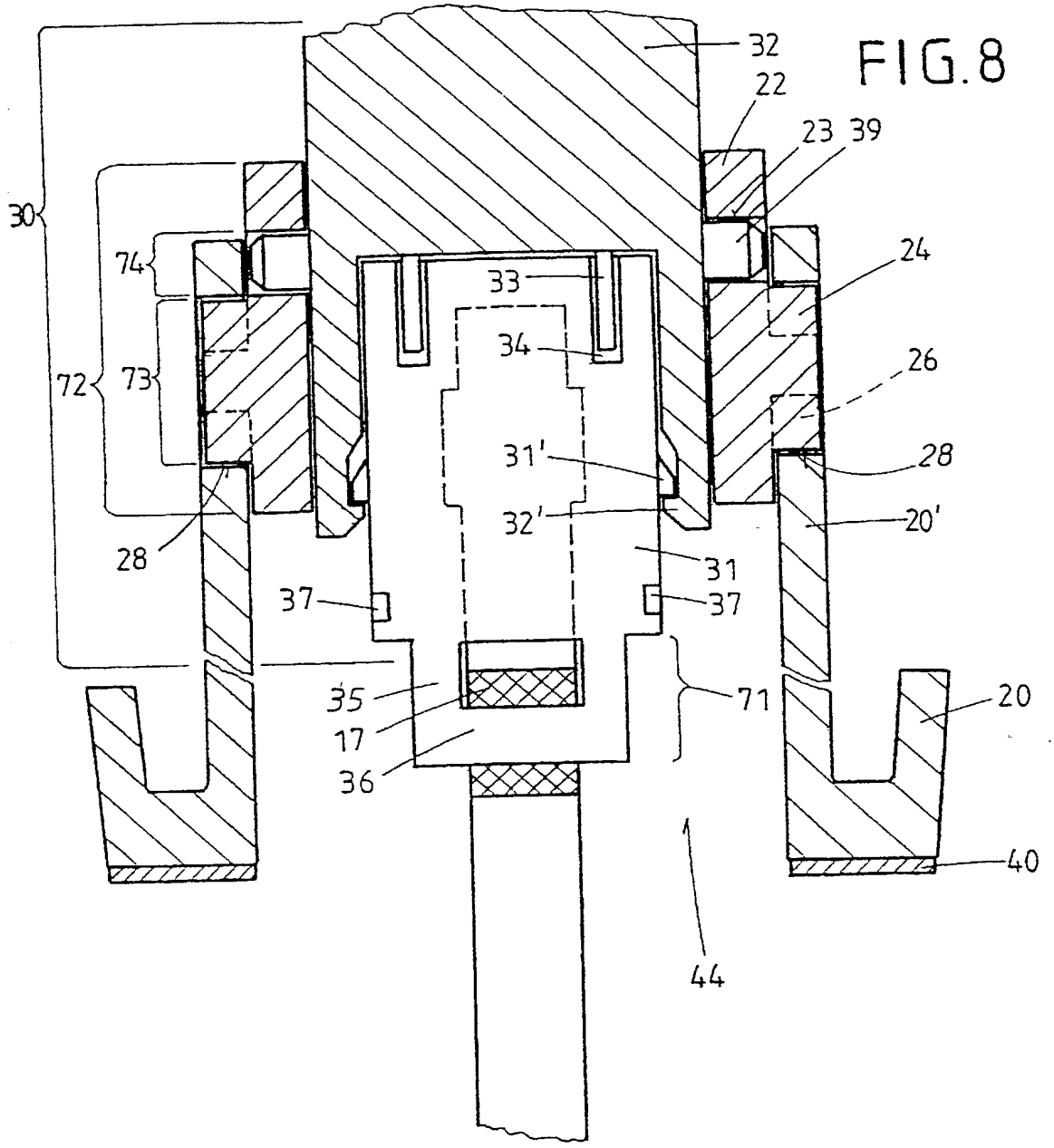
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FIG.8

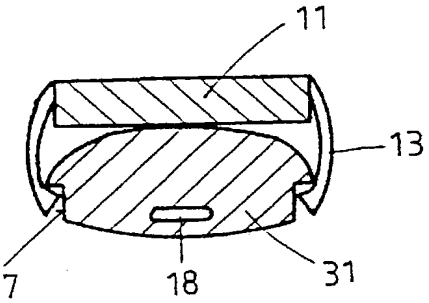
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FIG.9

10098436 .032102

COMBINED DECLARATION FOR PARENT APPLICATION AND POWER OF ATTORNEY *(includes Reference to PCT International Applications)*	Attorney's Docket No. **BM-87**

As a below named inventor, I hereby declare that:
My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: **DEVICE FOR ACTUATING AN ELECTRONIC LOCKING SYSTEM AND/OR A LOCK INTEGRATED IN A DOOR, A FLAP OR THE LIKE, ESPECIALLY IN A MOTOR VEHICLE**

the specification of which (check only one item below):

[ ] is attached hereto.

[ ] was filed as United States application

Serial No. _____
on _____,
and was amended
on _____ (if applicable).

[X] was filed as PCT international application

Number **PCT/EP00/09633**
on **October 2, 2000**,
and was amended under PCT Article 19
on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a). I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY *(if PCT, indicate PCT)*	APPLICATION NUMBER	DATE OF FILING *(day, month, year)*	PRIORITY CLAIMED UNDER 35 USC 119
GERMANY	**199 47 977.1**	**5 October 1999**	[X] YES [ ] NO
			[ ] YES [ ] NO

PTO-1391 (REV. 10-83) U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office

Combined Declaration For Parent Application and Power of Attorney (Continued) *(includes Reference to PCT International Applications)*	Docket No. BM-87

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of the application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty of disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occured between the filing date of the prior application(s) and the national or PCT internation filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS		STATUS *(CHECK ONE)*		
U.S. APPLICATION NUMBER	U.S. FILING DATE	PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.				
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NO.		

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(List name and registration number)*

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PTO-1391 (REV. 10-83) U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office

Combined Declaration For Parent Application and Power of Attorney (Continued)
(includes Reference to PCT International Applications)

Docket No. **BM-87**

202	FULL NAME OF INVENTOR	*Family Name*	*First Given Name*	*Second Given Name*
	RESIDENCE & CITIZENSHIP	*City*	*State Or Foreign Country*	*Citizenship*
	POST OFFICE ADDRESS	*Post Office Address*	*City*	*State & Zip Code*

203	FULL NAME OF INVENTOR	*Family Name*	*First Given Name*	*Second Given Name*
	RESIDENCE & CITIZENSHIP	*City*	*State Or Foreign Country*	*Citizenship*
	POST OFFICE ADDRESS	*Post Office Address*	*City*	*State & Zip Code*

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE OF INVENTOR 201	*SIGNATURE OF INVENTOR 202*	*SIGNATURE OF INVENTOR 203*
Reinhold Ellhofer		
DATE 07.03.02	*DATE*	*DATE*

PTO-1391 (REV. 10-83)

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